CLAIMS

What is claimed is:

1 1. An apparatus, comprising: 2 an adhesion layer abutting a conductive pad; 3 a molybdenum-containing barrier layer abutting said adhesion layer; a wetting layer abutting said molybdenum-containing barrier layer; and 4 5 high tin content solder material abutting said wetting layer. 1 2. The apparatus of claim 1, wherein said molybdenum-containing barrier 2 layer comprises a material containing at least about 90% (atomic) molybdenum. 1 3. The apparatus of claim 1, wherein said high tin content solder material 2 comprises a material containing at least about 90% (by weight) tin. 1 The apparatus of claim 1, further comprising said conductive pad abutting 4. 2 at least one layer of low k dielectric material. 5. The apparatus of claim 4, wherein said at least one layer of low-k 1 2 dielectric material comprises at least one layer of carbon doped oxide.

1 6. The apparatus of claim 1, wherein said wetting layer is substantially 2 subsumed in said high tin content solder material forming an intermetallic compound 3 layer. 1 7. A method comprising: providing at least one interlayer dielectric having at least one abutting conductive 2 3 pad; 4 forming an adhesion layer on at least a portion of said at least one conductive pad; 5 forming a molybdenum-containing barrier layer on at least a portion of said 6 adhesion layer; 7 forming a wetting layer on at least a portion of said molybdenum-containing 8 barrier layer; and 9 forming a high tin content solder plug on at least a portion of said wetting layer. 1 8. The method of claim 7, wherein forming said molybdenum-containing 2 barrier layer comprises forming a molybdenum-containing barrier layer containing at 3 least about 90% (atomic) molybdenum. 1 9. The method of claim 7, wherein forming said high tin content solder plug 2 comprises a high tin content solder plug containing at least about 90% (by weight) tin.

1	10.	The method of claim 7, further comprising said conductive pad abutting at
2	least one layer	r of low k dielectric material.
1	11.	The method of claim 7, wherein providing at least one interlayer dielectric
2	comprises pro	oviding at least one layer of carbon doped oxide.
1	12.	The method of claim 7, further comprising reflowing said high tin content
2	solder plug to	from a solder bump.
1	13.	The method of claim 12, wherein said wetting layer is substantially
2	subsumed into	o said high tin content solder bump during said reflow.
1	14.	The method of claim 7, wherein forming said molybdenum-containing
2	barrier layer c	omprises sputter depositing a molybdenum-containing material.
1	15.	An electronic system, comprising:
2	an exte	ernal substrate within a housing; and
3	at leas	t one microelectronic device package attached to said external substrate,
4	having at least	t one under bump metallization layer including:

5		an adhesion layer abutting a conductive pad;	
6		a molybdenum-containing barrier layer abutting said adhesion layer;	
7		a wetting layer abutting said molybdenum-containing barrier layer; and	
8		high tin content solder material abutting said wetting layer; and	
9	an input device interfaced with said external substrate; and		
10	a display device interfaced with said external substrate.		
1	16.	The system of claim 15, wherein said molybdenum-containing barrier	
2	layer comprise	es a material containing at least about 90% (atomic) molybdenum.	
1	17.	The system of claim 15, wherein said high tin content solder material	
2	comprises a material containing at least about 90% (by weight) tin.		
1	18.	The system of claim 15, further comprising said conductive pad abutting	
2	at least one layer of low k dielectric material.		
1	19.	The system of claim 18, wherein said at least one layer of low-k dielectric	
2	material comp	rises at least one layer of carbon doped oxide.	
1	20.	The system of claim 15, wherein said wetting layer is substantially	
2	subsumed in said high tin content solder material forming an intermetallic compound		

layer.